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ABSTRACT

Standardized curricula are provided for two courses for the secondary vocational education program in Mississippi: building trades I and II. The eight units in building trades I are as follows: safety; measurement; tools, equipment, and hardware; building plans and blueprints; introduction to carpentry; introduction to plumbing; introduction to electrical wiring; and introduction to masonry and brick. Building trades II consists of four units: safety; framing and roofing; exterior finish; and interior finish. Each unit consists of these components: objectives, with core/essential objectives indicated; suggested instructional practices; list of suggested resources; list of evaluation and suggested minimum performance standards, with core/essential objectives indicated; and performance record, with core/essential objectives indicated. A checklist for each course combining all unit performance standards into a single list is included. (YLB)

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STANDARDIZED CURRICULUM

FOR

BUILDING TRADES

MISSISSIPPI DEPARTMENT OF EDUCATION

OFFICE OF VOCATIONAL, TECHNICAL

AND ADULT EDUCATION

June 1989

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FOREWORD

This volume is intended to be used in the State of Mississippi as a mechanism for standardizing vocational education course titles and core contents. The need for standardization of curricula was triggered by provisions in the Educational Reform Act of 1982 which mandated:

-- elimination of nearly all currently existing curriculum requirements and development of new curriculum content that is "properly sequenced" and "coordinated";

-- steps to ensure that students master one level of course work before being advanced to the next level and that progression is properly sequenced;

-- a criterion-referenced, state-wide testing program that is built upon an identified set of "basic skills" keyed to student performance in grades 3, 5, 8, and 11;

-- revised graduation requirements that take into account student performance on the basic skills and also on a test of "functional literacy skills"; and

-- a system of accrediting schools that takes into account the performance of districts, schools, and students.

In addition to the mandates of the Educational Reform Act, the Strategic Plan for Vocational and Technical Education in Mississippi also calls for improving the quality of vocational and technical education through the standardization of curricula and the articulation of secondary and postsecondary programs.

Both of these mandates were further reinforced by legislation passed in 1986 which called for the establishment of state-wide "guidelines and procedures for managing an instructional program in the public schools." This legislation calls for instructional management plans containing the following components:

1. a written list of learning objectives for every course for which academic credit is given on students' transcripts (state specified core objectives must be included);

2. <u>suggested</u> instructional practices and resources for the learning objectives;

3. standards for student performance for each learning objective; and

4. systematic procedures for evaluating student performance on the learning objectives.

Specific local district actions regarding the state-wide instructional management plan are also required, namely:

1. The objectives contained in this document are common to all programs in the state. Core objectives are designated with an asterisk. The local district is encouraged to add additional objectives to this listing to meet local needs of students and employers.

2. The local school board must officially adopt the learning objectives as the district's curricula.

3. Pass/fail policies must be based on mastery of learning objectives.

4. Student performance on the learning objectives must be systematically evaluated at least once during the school year.

5. During the school year, records of individual student performance must indicate whether or not the objectives have been mastered. The record must indicate mastery status for each of the objectives tested in the Basic Skills Assessment Program (including functional literacy skills) and must be permanently maintained on all students who do <u>not</u> master the basic and functional literacy skills prior to being tested on them.

6. Each year, information about student performance on learning objectives must be reviewed. Those objectives which students are not mastering must be identified, and a plan must be developed for improving student performance on those objectives.

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BUILDING TRADES I

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BUILDING TRADES I

Unit No.	Title
1	Safety
2	Measurement
3	Tools, Equipment and Hardware
4	Building Plans and Blueprints
5	Introduction to Carpentry
6	Introduction to Plumbing
7	Introduction to Electrical Wiring
8	Introduction to Masonry and Brick

COURSE: Building Trades I

Unit 1: Safety

Objectives: Upon completion of this unit, the student will:

*1. List and explain general rules related to work safety in the shop.
*2. List and explain general rules related to hand tool safety.
*3. List and explain general rules related to power tool safety.

*Indicates core/essential objectives

Suggested Instructional Practices:

Lecture-discussion
Laboratory demonstration and practice

Suggested Resources:

Primary Resource: Hohhertz, Durwin. General Construction Trades: Introduction. Commerce, TX: Occupational Curriculum Laboratory. 1986.

Evaluation and Suggested Minimum Performance Standards:

*Objective 1: The student will list ten general rules related to work safety in the shop and write a one-sentence explanation for each rule.
*Objective 2: The student will list eight rules related to hand tool safety and write a one-sentence explanation for each rule.
*Objective 3: The student will list twelve rules related to power tool safety and write a one-sentence explanation for each rule.

*Indicates core/essential objectives

Performance Record: Place a check by each objective the student achieved:

____ *1. Listed and explained general rules related to work safety in the shop.
____ *2. Listed and explained rules related to hand tool safety.
____ *3. Listed and explained rules related to power tool safety.

COURSE: Building Trades I

Unit 2: Measurement

Objectives: Upon completion of this unit, the student will:

*1. Identify tools used in measurement in the building trades.
*2. Identify the graduations found on a rule marked in sixteenths.
*3. Read a rule graduated in eighths and sixteenths of an inch.
*4. Read a rule to a point of measurement.
*5. Measure objects using a rule.
*6. Draw lines to length using a rule.

*Indicates core/essential objectives

Suggested Instructional Practices:

Lecture-discussion
Laboratory demonstration and practice

Suggested Resources:

Primary Resource: Hohhertz, Durwin. General Construction Trades: Carpentry. Commerce, TX: Occupational Curriculum Laboratory. 1986.

Evaluation and Suggested Minimum Performance Standards:

*Objective 1: The student will identify three types of rules and three types of squares used in measurement in the building trades industry.
*Objective 2: The student will identify the five different marking graduations found on a rule marked in sixteenths of an inch.
*Objective 3: The student will read a rule graduated in eighths and a rule graduated in sixteenths by labeling the graduations on the rule and reducing to the least common denominator.
*Objective 4: The student will read a rule marked in sixteenths to the nearest graduation and reduce the measurement to the least common denominator.
*Objective 5: The student will measure objects to the nearest sixteenth of an inch.
*Objective 6: The student will draw lines to given lengths to the nearest sixteenth of an inch.

*Indicates core/essential objectives

Performance Record: Place a check by each objective the student achieved:

____ *1. Identified tools used in measurement in the building trades.
____ *2. Identified the graduations found on a rule marked in sixteenths.
____ *3. Read a rule graduated in eighths and sixteenths of an inch.
____ *4. Read a rule to a point of measurement.
____ *5. Measured objects using a rule.
____ *6. Drew lines to length using a rule.

*Indicates core/essential objectives

COURSE: Building Trades I

Unit 3: Tools, Equipment and Hardware

Objectives: Upon completion of this unit, the student will:

*1. Identify common hand tools used in the building trades industry and state the use of each.
2. List rules associated with hand tool safety and care.
3. Identify the parts of a portable circular saw and state the function of each.
*4. List rules for safe use of a portable circular saw.
5. Identify the parts of a portable saber saw and state the function of each.
*6. List rules for the safe use of the portable saber saw.
7. Identify the parts of a portable drill and state the function of each.
*8. List rules for the safe use of the portable drill.
9. Identify the parts of a portable router and state the function of each.
*10. List rules for the safe use of the portable router.
11. Identify the parts of a portable belt sander and state the function of each.
*12. List rules for the safe use of the portable belt sander.
13. Identify parts of the bench grinder and state the function of each.
*14. List rules for the safe use of a bench grinder.
15. Identify the parts of a drill press and state the function of each.
*16. List rules for safe use of the drill press.
17. Identify the parts of a table saw and state the function of each.
*18. List rules for safe use of the table saw.
19. Identify the parts of a radial arm saw and state the function of each.
*20. List rules for safe use of the radial arm saw.
*21. Identify fasteners used in the building trades.

*Indicates core/essential objectives

Suggested Instructional Practices:

Lecture-discussion
Laboratory demonstration and practice

Suggested Resources:

Primary Resource: Hohhertz, Durwin. General Construction Trades: Introduction. Commerce, TX: Occupational Curriculum Laboratory. 1986.

Evaluation and Suggested Minimum Performance Standards:

*Objective 1: The student will identify 45 common hand tools used in the building trades industry including tools used for layout, leveling, wood cutting, drilling, filing, holding and adjusting, and hammering and punching. The student will also state one use for each tool identified.

Objective 2: The student will list six rules associated with hand tool safety and use.

Objective 3: The student will identify seven parts of the portable circular saw and state the function of each part.

*Objective 4: The student will list five rules for the safe use of the portable circular saw.

Objective 5: The student will identify five parts of a portable saber saw and state the function of each part.

*Objective 6: The student will list seven rules for the safe use of a portable saber saw.

Objective 7: The student will identify five parts of the portable electric drill and state the function of each part.

*Objective 8: The student will list six rules associated with the safe use of the portable electric drill.

Objective 9: The student will identify five parts of the portable router and state the function of each part.

*Objective 10: The student will list five rules associated with the safe use of the portable router.

Objective 11: The student will identify six parts of the portable belt sander and state the function of each part.

*Objective 12: The student will list six rules for the safe use of the portable belt sander.

Objective 13: The student will identify six parts of the bench grinder and state the function of each part.

*Objective 14: The student will list five rules for the safe use of the bench grinder.

Objective 15: The student will identify eight parts of the drill press and state the function of each part.

*Objective 16: The student will list six rules for the safe use of the drill press.

Objective 17: The student will identify six parts of a table saw and state the function of each part.

*Objective 18: The student will list six rules associated with the safe use of a table saw.

Objective 19: The student will identify nine parts of the radial arm saw and state the function of each part.

*Objective 20: The student will list six rules associated with the safe use of the radial arm saw.

*Objective 21: The student will identify 25 fasteners used in the construction industry including nails, staples, screws, bolts, nuts, and washers.

*Indicates core/essential objectives

Performance Record: Place a check by each objective the student achieved:

____ *1. Identified common hand tools used in the building trades industry and stated the use of each.
____ 2. Listed rules associated with hand tool safety and care.
____ 3. Identified the parts of a portable circular saw and stated the function of each.
____ *4. Listed rules for safe use of a portable circular saw.
____ 5. Identified the parts of a portable saber saw and stated the function of each.
____ *6. Listed rules for the safe use of the portable saber saw.
____ 7. Identified the parts of a portable drill and stated the function of each.
____ *8. Listed rules for the safe use of the portable drill.
____ 9. Identified the parts of a portable router and stated the function of each.
____*10. Listed rules for the safe use of the portable router.
____ 11. Identified the parts of a portable belt sander and stated the function of each.
____*12. Listed rules for the safe use of the portable belt sander.
____ 13. Identified parts of the bench grinder and stated the function of each.
____*14. Listed rules for the safe use of a bench grinder.
____ 15. Identified the parts of a drill press and stated the function of each.
____*16. Listed rules for safe use of the drill press.
____ 17. Identified the parts of a table saw and stated the function of each.
____*18. Listed rules for safe use of the table saw.
____ 19. Identified the parts of a radial arm saw and stated the function of each.
____*20. Listed rules for safe use of the radial arm saw.
____*21. Identified fasteners used in the building trades.

*Indicates core/essential objectives

COURSE: Building Trades I

Unit 4: Building Plans and Blueprints

Objectives: Upon completion of this unit, the student will:

*1. List the basic views shown in a drawing.
*2. Identify the different types of lines used on a blueprint.
*3. Identify special symbols found on a blueprint.
*4. Interpret information found on a set of residential blueprints.

*Indicates core/essential objectives

Suggested Instructional Practices:

Lecture-discussion
Laboratory demonstration and practice

Suggested Resources:

Primary Resource: Hohhertz, Durwin. General Construction Trades: Carpentry. Commerce, TX: Occupational Curriculum Laboratory. 1986.

Evaluation and Suggested Minimum Performance Standards:

*Objective 1: The student will list the three basic views shown in a drawing.
*Objective 2: The student will identify six different types of lines found in drawings.
*Objective 3: The student will identify the meanings of 18 plumbing and 14 electrical symbols commonly used in drawings.
*Objective 4: The student will interpret information found on a set of residential blueprints by correctly identifying dimensions and symbols.

*Indicates core/essential objectives

Performance Record: Place a check by each objective the student achieved:

____ *1. Listed the basic views shown in a drawing.
____ *2. Identified the different types of lines used on a blueprint.
____ *3. Identified special symbols found on a blueprint.
____ *4. Interpreted information found on a set of residential blueprints.

*Indicates core/essential objectives

COURSE: Building Trades I

Unit 5: Introduction to Carpentry

Objectives: Upon completion of this unit, the student will:

1. Identify different types of woods used in construction.
2. Classify a given piece of lumber according to its size class.
3. Compute the board footage of a given piece of lumber.
4. Describe how lumber and plywood should be stored.
*5. Identify the parts of a wall frame.
*6. Identify wood joints commonly used in framing.
*7. Identify the parts of a house frame.
*8. Construct wood joints commonly used in framing.

*Indicates core/essential objectives

Suggested Instructional Practices:

Lecture-discussion
Laboratory demonstration and practice

Suggested Resources:

Primary Resource: Hohhertz, Durwin. General Construction Trades: Carpentry. Commerce, TX: Occupational Curriculum Laboratory. 1986.

Evaluation and Suggested Minimum Performance Standards:

Objective 1: The student will identify two different types of hardwoods and three different types of softwoods used in construction.
Objective 2: The student will classify a given piece of lumber according to its size class (board, dimension lumber, timber).
Objective 3: The student will compute the board footage of a given piece of lumber.
Objective 4: The student will describe four factors to consider in storing lumber on-site and three factors to consider in storing lumber in inside storage areas.
*Objective 5: The student will identify eight parts of a wall frame.
*Objective 6: The student will identify seven wood joints commonly used in framing.
*Objective 7: The student will identify 15 parts of a house frame.
*Objective 8: The student will construct five wood joints commonly used in framing.

*Indicates core/essential objectives

Performance Record: Place a check by each objective the student achieved:

____ 1. Identified different types of woods used in construction.
____ 2. Classified a given piece of lumber according to its size class.
____ 3. Computed the board footage of a given piece of lumber.
____ 4. Described how lumber and plywood should be stored.
____ *5. Identified the parts of a wall frame.
____ *6. Identified wood joints commonly used in framing.
____ *7. Identified the parts of a house frame.
____ *8. Constructed wood joints commonly used in framing.

*Indicates core/essential objectives

COURSE: Building Trades I

Unit 6: Introduction to Plumbing

Objectives: Upon completion of this unit, the student will:

*1. Identify basic hand tools used in plumbing and state the purpose or use of each.
*2. Identify standard sizes of steel pipe and copper tubing.
*3. Identify common pipe fittings by shape.
*4. Identify the common types of plastic pipe.
*5. Identify common types of valves, bibbs, and cocks and state the use of each.
*6. Identify fittings used in DWV lines.
*7. Measure, cut, ream, and thread steel pipe.
*8. Install a PVC fitting on PVC pipe.
*9. Install a plumbing fixture.

*Indicates core/essential objectives

Suggested Instructional Practices:

Lecture-discussion
Laboratory demonstration and practice

Suggested Resources:

Primary Resource: Hohhertz, Durwin. General Construction Trades: Plumbing. Commerce, TX: Occupational Curriculum Laboratory. 1986.

Evaluation and Suggested Minimum Performance Standards:

*Objective 1: The student will identify 15 basic hand tools used in plumbing and state the purpose or use of each.
*Objective 2: The student will identify five standard sizes of steel pipe and copper tubing.
*Objective 3: The student will identify eight common pipe fittings by shape.
*Objective 4: The student will identify three common types of plastic pipe.
*Objective 5: The student will identify seven common types of valves, bibbs, and cocks and state the use of each.
*Objective 6: The student will identify six fittings used in plastic DWV lines.
*Objective 7: The student will measure, cut, ream, and thread steel pipe following industry standards and to teacher specifications.
*Objective 8: The student will install a PVC fitting on PVC pipe following industry procedures and standards.

*Objective 9: The student will install a plumbing fixture including supply and drainage lines to meet industry standards.

*Indicates core/essential objectives

Performance Record: Place a check by each objective the student achieved:

____ *1. Identified basic hand tools used in plumbing and stated the purpose or use of each.
____ *2. Identified standards sizes of steel pipe and copper tubing.
____ *3. Identified common pipe fittings by shape.
____ *4. Identified the common types of plastic pipe.
____ *5. Identified common types of valves, bibbs, and cocks and stated the use of each.
____ *6. Identified fittings used in DWV lines.
____ *7. Measured, cut, reamed, and threaded steel pipe.
____ *8. Installed a PVC fitting on PVC pipe.
____ *9. Installed a plumbing fixture.

*Indicates core/essential objectives

COURSE: Building Trades I

Unit 7: Introduction to Electrical Wiring

Objectives: Upon completion of this unit, the student will:

*1. List and describe common causes of electrical accidents.
*2. List steps to follow in assisting electrical shock victims.
*3. Identify unsafe electrical conditions.
*4. List electrical safety factors associated with the work area, tools and equipment, electrical installation, and special precautions.
*5. Define terms associated with the fundamentals of electricity.
*6. Describe the difference in a 110 volt and 220 volt electrical service.
*7. Distinguish between single phase and three phase electric power.
*8. Identify tools used in electrical wiring.
*9. Identify supplies and materials used in residential wiring.
*10. Identify the parts of a residential electrical service entrance.
*11. Mount an electrical box.
*12. Install NM cable in an electrical box.
*13. Install a duplex receptacle in an electrical box.
*14. Install 3-way switches in an electrical box.
*15. Identify symbols used in residential electrical wiring diagrams.
*16. Describe the different types of branch circuits.

*Indicates core/essential objectives

Suggested Instructional Practices:

Lecture-discussion
Laboratory demonstration and practice

Suggested Resources:

Primary Resource: Hohhertz, Durwin. General Construction Trades: Electrical. Commerce, TX: Occupational Curriculum Laboratory. 1986. (Objectives 1-6, 8-16)

Turner, Howard J. Understanding Electricity and Electric Terms. Athens, GA: American Association for Vocational Instructional Materials. 1981.

Evaluation and Suggested Minimum Performance Standards:

*Objective 1: The student will list six causes of electrical accidents and describe one factor associated with each cause.
*Objective 2: The student will list five steps to follow in assisting electrical shock victims.
*Objective 3: The student will identify eight unsafe electrical conditions that may be found in a home or shop.

*Objective 4: The student will list three electrical safety factors associated with each of the following areas: work area, tools and equipment, electrical installation, and special precautions.

*Objective 5: The student will define 16 terms associated with the fundamentals of electricity.

*Objective 6: The student will describe one difference in a 110 volt and 220 volt electrical service.

*Objective 7: The student will list the distinguishing characteristic between single phase and three phase electric power.

*Objective 8: The student will identify 25 tools used in electrical wiring.

*Objective 9: The student will identify 25 different supplies and materials used in residential wiring including conductors, connectors, electrical boxes, covers, switches, outlets and receptacles, and safety devices used in residential wiring.

*Objective 10: The student will identify seven parts of a residential electrical service entrance.

*Objective 11: The student will mount an electrical box according to the National Electric Code.

*Objective 12: The student will install NM cable in an electrical box according to the National Electric Code.

*Objective 13: The student will install a duplex receptacle in an electrical box according to the National Electric Code.

*Objective 14: The student will install 3-way switches in an electrical box according to the National Electric Code.

*Objective 15: The student will identify seven symbols used in residential electrical wiring diagrams.

*Objective 16: The student will describe the three different types of branch circuits in terms of their uses and number of outlets per circuit.

*Indicates core/essential objectives

Performance Record: Place a check by each objective the student achieved:

____ *1. Listed and described common causes of electrical accidents.
____ *2. Listed steps to follow in assisting electrical shock victims.
____ *3. Identified unsafe electrical conditions.
____ *4. Listed electrical safety factors associated with the work area, tools and equipment, electrical installation, and special precautions.
____ *5. Defined terms associated with the fundamentals of electricity.
____ *6. Described the differences in a 110 volt and 220 volt electrical service.
____ *7. Distinguish between single phase and three phase electric power.
____* 8. Identified tools used in electrical wiring.
____* 9. Identified supplies and materials used in residential wiring.

____*10. Identified the parts of a residential electrical service entrance.
____*11. Mounted an electrical box.
____*12. Installed NM cable in an electrical box.
____*13. Installed a duplex receptacle in an electrical box.
____*14. Installed 3-way switches in an electrical box.
____*15. Identified symbols used in residential electrical wiring diagrams.
____*16. Described the different types of branch circuits.

*Indicates core/essential objectives

COURSE: Building Trades I

Unit 8: Introduction to Masonry and Brick

Objectives: Upon completion of this unit, the student will:

*1. List rules for safety in masonry work.
*2. Identify personal safety equipment used in masonry work.
*3. Identify hand and power tools used in masonry work and describe the use of each.
4. Identify the types of common brick used in masonry.
5. Identify the types of concrete blocks.
*6. State the formula for mixing mortar using a pre-mix.
*7. List the steps in mixing mortar using a power mixer or a mortar box.
*8. State rules for caring for mixed mortar.
*9. Mix mortar.
10. Supply a mortar stand with mortar.
*11. Identify the types of masonry joints.
*12. Identify the kinds of brick courses.
*13. Identify the kinds of brick bonds.
*14. Lay a corner lead.
*15. Complete a wall between corner leads.

*Indicates core/essential objectives

Suggested Instructional Practices:

Lecture-discussion
Laboratory demonstration and practice

Suggested Resources:

Primary Resource: Hohhertz, Durwin. General Construction Trades: Masonry. Commerce, TX: Occupational Curriculum Laboratory. 1987.

Evaluation and Suggested Minimum Performance Standards:

*Objective 1: The student will list three rules for safety in masonry work for each of the following topics: hand tools, other equipment, power equipment, and chemicals.
*Objective 2: The student will identify three pieces of personal safety equipment used in masonry work.
*Objective 3: The student will identify 18 hand and power tools and equipment used in masonry work and describe the use of each.
Objective 4: The student will identify three types of brick used in masonry.
Objective 5: The student will identify three types of concrete blocks.

*Objective 6: The student will state the formula for mixing mortar using a pre-mix.
*Objective 7: The student will list three steps in mixing mortar using a power mixer or a mortar box.
*Objective 8: The student will state four rules for caring for mixed mortar.
*Objective 9: The student will prepare a mix of mortar to meet industry specifications.
Objective 10: The student will supply a mortar stand with mortar following industry practices.
*Objective 11: The student will identify three types of masonry joints.
*Objective 12: The student will identify three kinds of brick courses.
*Objective 13: The student will identify four kinds of brick bonds.
*Objective 14: The student will lay a corner lead to specifications.
*Objective 15: The student will complete a wall between corner leads to specifications.

*Indicates core/essential objectives

Performance Record: Place a check by each objective the student achieved:

____ *1. Listed rules for safety in masonry work.
____ *2. Identified personal safety equipment used in masonry work.
____ *3. Identified hand and power tools used in masonry work and described the use of each.
____ 4. Identified the types of common brick used in masonry.
____ 5. Identified the types of concrete blocks.
____ *6. Stated the formula for mixing mortar using a pre-mix.
____ *7. Listed the steps in mixing mortar using a power mixer or a mortar box.
____ *8. Stated rules for caring for mixed mortar.
____ *9. Mixed mortar.
____ 10. Supplied a mortar stand with mortar.
____*11. Identified the types of masonry joints.
____*12. Identified the kinds of brick courses.
____*13. Identified the kinds of brick bonds.
____*14. Laid a corner lead.
____*15. Completed a wall between corner leads.

*Indicates core/essential objectives

BUILDING TRADES II

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BUILDING TRADES II

Unit No.	Title
1	Safety
2	Framing and Roofing
3	Exterior Finish
4	Interior Finish

COURSE: Building Trades II

Unit 1: Safety (Review and Reinforcement)

Objectives: Upon completion of this unit, the student will:

*1. List and explain general rules related to work safety in the shop.
*2. List and explain general rules related to hand tool safety.
*3. List and explain general rules related to power tool safety.

*Indicates core/essential objectives

Suggested Instructional Practices:

Lecture-discussion
Laboratory demonstration and practice

Suggested Resources:

Primary Resource: Hohhertz, Durwin. General Construction Trades: Introduction. Commerce, TX: Occupational Curriculum Laboratory. 1986.

Evaluation and Suggested Minimum Performance Standards:

*Objective 1: The student will list ten general rules related to work safety in the shop and write a one-sentence explanation for each rule.
*Objective 2: The student will list eight rules related to hand tool safety and write a one-sentence explanation for each rule.
*Objective 3: The student will list twelve rules related to power tool safety and write a one-sentence explanation for each rule.

*Indicates core/essential objectives

Performance Record: Place a check by each objective the student achieved:

____ *1. Listed and explained general rules related to work safety in the shop.
____ *2. Listed and explained rules related to hand tool safety.
____ *3. Listed and explained rules related to power tool safety.

*Indicates core/essential objectives

COURSE: Building Trades II

Unit 2: Framing and Roofing

Objectives: Upon completion of this unit, the student will:

*1. Identify the basic parts of a house frame.
*2. Identify floor and sill framing and support members.
*3. Install floor framing.
*4. Identify the framing members used in walls and partitions.
*5. Frame a wall and partition.
*6. Lay out and install ceiling joists.
*7. Identify the different styles of roofs.
*8. Identify the parts of a roof frame.
*9. Identify the different types of roof trusses.
*10. Identify the parts of a simple roof truss.
*11. Frame and sheath a roof.

*Indicates core/essential objectives

Suggested Instructional Practices:

Lecture-discussion
Laboratory demonstration and practice

Suggested Resources:

Primary Resource: Hendrix, Laborn J. "Bud." Residential Carpentry. Washington, DC: Associated General Contractors of America. 1985.

Evaluation and Suggested Minimum Performance Standards:

*Objective 1: The student will identify 20 basic parts of a house.
*Objective 2: The student will identify ten floor and sill framing and support members.
*Objective 3: The student will build a box sill, install floor joist, frame an opening, and install bridging and subflooring material to specifications.
*Objective 4: The student will identify seven framing members used in walls and partitions.
*Objective 5: The student will construct a wall section for a single-story structure to specifications.
*Objective 6: The student will lay out and install ceiling joists to specifications.
*Objective 7: The student will identify seven different styles of roofs.
*Objective 8: The student will identify seven different parts of a roof frame.
*Objective 9: The student will identify five common types of roof trusses.

*Objective 10: The student will identify four parts of a simple roof truss.
*Objective 11: The student will frame and sheath a roof to specifications.

*Indicates core/essential objectives

Performance Record: Place a check by each objective the student achieved:

____ *1. Identified the basic parts of a house frame.
____ *2. Identified floor and sill framing and support members.
____ *3. Install floor framing.
____ *4. Identified the framing members used in walls and partitions.
____ *5. Framed a wall and partition.
____ *6. Laid out and installed ceiling joists.
____ *7. Identified the different styles of roofs.
____ *8. Identified the parts of a roof frame.
____ *9. Identified the different types of roof trusses.
____*10. Identified the parts of a simple roof truss.
____*11. Framed and sheathed a roof.

*Indicates core/essential objectives

COURSE: Building Trades II

Unit 3: Exterior Finish

Objectives: Upon completion of this unit, the student will:

*1. Identify the parts of a box cornice.
*2. Build a box cornice.
3. Name classes of roofing.
4. Identify basic types of asphalt shingles.
*5. Apply underlayment and asphalt shingles.
*6. Identify types of exterior sheathing.
7. Identify categories and types of exterior coverings.
*8. Install sheathing and exterior covering.
9. Identify the types of windows.
10. Identify the parts of a window unit.
11. Identify materials used for window panes.
*12. Install a window unit.
13. Identify the types of entry doors used in residential construction.
*14. Identify the parts of a door unit.
*15. Install an exterior door unit.

*Indicates core/essential objectives

Suggested Instructional Practices:

Lecture-discussion
Laboratory demonstration and practice

Suggested Resources:

Primary Resource: Hendrix, Laborn J. "Bud." Residential Carpentry. Washington, DC: Associated General Contractors of America. 1985.

Evaluation and Suggested Minimum Performance Standards:

*Objective 1: The student will identify six parts of a box cornice.
*Objective 2: The student will build a box cornice to specifications.
Objective 3: The student will name five classes of roofing materials.
Objective 4: The student will identify four types of asphalt shingles.
*Objective 5: The student will apply underlayment and shingles on a roof to specifications.
*Objective 6: The student will identify five types of exterior sheathing materials.
Objective 7: The student will identify four major categories of exterior coverings and three types of materials within each category.
*Objective 8: The student will install sheathing and exterior covering to specifications.

Objective 9: The student will identify six different types of windows used in residential construction.
Objective 10: The student will identify nine parts of a window unit.
Objective 11: The student will identify six different materials used for window panes.
*Objective 12: The student will install a double hung window unit to specifications.
Objective 13: The student will identify five different types of entry doors used in residential construction.
*Objective 14: The student will identify nine parts of an exterior door installation.
*Objective 15: The student will install an exterior door unit to specifications.

*Indicates core/essential objectives

Performance Record: Place a check by each objective the student achieved:

____ *1. Identified the parts of a box cornice.
____ *2. Built a box cornice.
____ 3. Named classes of roofing.
____ 4. Identified basic types of asphalt shingles.
____ *5. Applied underlayment and asphalt shingles.
____ *6. Identified types of exterior sheathing.
____ 7. Identified categories and types of exterior coverings.
____ *8. Installed sheathing and exterior covering.
____ 9. Identified the types of windows.
____ 10. Identified the parts of a window unit.
____ 11. Identified materials used for window panes.
____ *12. Installed a window unit.
____ 13. Identified the types of entry doors used in residential construction.
____ *14. Identified the parts of a door unit.
____ *15. Installed an exterior door unit.

*Indicates core/essential objectives

COURSE: Building Trades II

Unit 4: Interior Finish

Objectives: Upon completion of this unit, the student will:

*1. Identify types of insulation.
2. Install blanket insulation in walls.
*3. Install gypsum wallboard.
4. Identify the different styles of interior paneling.
5. Install V-grooved paneling and trim.
*6. Install ceiling tile.
7. Identify types of interior trim.
*8. Install an interior door unit.

*Indicates core/essential objectives

Suggested Instructional Practices:

Lecture-discussion
Laboratory demonstration and practice

Suggested Resources:

Primary Resource: Hendrix, Laborn J. "Bud." Residential Carpentry. Washington, DC: Associated General Contractors of America. 1985.

Evaluation and Suggested Minimum Performance Standards:

*Objective 1: The student will identify seven types of insulation.
Objective 2: The student will install blanket insulation in walls to specifications.
*Objective 3: The student will install gypsum wallboard to specifications.
Objective 4: The student will identify three different styles of interior paneling.
Objective 5: The student will install V-grooved paneling and trim to specifications.
*Objective 6: The student will install ceiling tile to specifications.
Objective 7: The student will identify nine types of interior trim.
*Objective 8: The student will install an interior door unit to specifications.

*Indicates core/essential objectives

Performance Record: Place a check by each objective the student achieved:

____ *1. Identified types of insulation.
____ 2. Installed blanket insulation in walls.
____ *3. Installed gypsum wallboard.
____ 4. Identified the different styles of interior paneling.

____ 5. Installed V-grooved paneling and trim.
____ *6. Installed ceiling tile.
____ 7. Identified types of interior trim.
____ *8. Installed an interior door unit.

*Indicates core/essential objectives

STUDENT PERFORMANCE RECORD

BUILDING TRADES

BUILDING TRADES I

Student: _____

This record is provided as an alternative to the student performance records at the end of each unit. It can be duplicated for each student and serve as a cumulative record of competencies achieved in the course.

Place a check by each objective the student achieved; you may wish to note the date that the student achieved the objective.

C = Core competencies.

____ C1. Listed and explained general rules related to work safety in the shop.
____ C2. Listed and explained rules related to hand tool safety.
____ C3. Listed and explained rules related to power tool safety.
____ C4. Identified tools used in measurement in the building trades.
____ C5. Identified the graduations found on a rule marked in sixteenths.
____ C6. Read a rule graduated in eighths and sixteenths of an inch.
____ C7. Read a rule to a point of measurement.
____ C8. Measured objects using a rule.
____ C9. Drew lines to length using a rule.
____C10. Identified common hand tools used in the building trades industry and stated the use of each.
____ 11. Listed rules associated with hand tool safety and care.
____ 12. Identified the parts of a portable circular saw and stated the function of each.
____C13. Listed rules for safe use of a portable circular saw.
____ 14. Identified the parts of a portable saber saw and stated the function of each.
____C15. Listed rules for the safe use of the portable saber saw.
____ 16. Identified the parts of a portable drill and stated the function of each.
____C17. Listed rules for the safe use of the portable drill.
____ 18. Identified the parts of a portable router and stated the function of each.
____C19. Listed rules for the safe use of the portable router.
____ 20. Identified the parts of a portable belt sander and stated the function of each.
____C21. Listed rules for the safe use of the portable belt sander.
____ 22. Identified parts of the bench grinder and stated the function of each.
____C23. Listed rules for the safe use of a bench grinder.
____ 24. Identified the parts of a drill press and stated the function of each.
____C25. Listed rules for safe use of the drill press.
____ 26. Identified the parts of a table saw and stated the function of each.
____C27. Listed rules for safe use of the table saw.

____ 28. Identified the parts of a radial arm saw and stated the function of each.
____C29. Listed rules for safe use of the radial arm saw.
____C30. Identified fasteners used in the building trades.
____C31. Listed the basic views shown in a drawing.
____C32. Identified the different types of lines used on a blueprint.
____C33. Identified special symbols found on a blueprint.
____C34. Interpreted information found on a set of residential blueprints.
____ 35. Identified different types of woods used in construction.
____ 36. Classified a given piece of lumber according to its size class.
____ 37. Computed the board footage of a given piece of lumber.
____ 38. Described how lumber and plywood should be stored.
____C39. Identified the parts of a wall frame.
____C40. Identified wood joints commonly used in framing.
____C41. Identified the parts of a house frame.
____C42. Constructed wood joints commonly used in framing.
____C43. Identified basic hand tools used in plumbing and stated the purpose or use of each.
____C44. Identified standards sizes of steel pipe and copper tubing.
____C45. Identified common pipe fittings by shape.
____C46. Identified the common types of plastic pipe.
____C47. Identified common types of valves, bibbs, and cocks and stated the use of each.
____C48. Identified fittings used in DWV lines.
____C50. Measured, cut, reamed, and threaded steel pipe.
____C51. Installed a PVC fitting on PVC pipe.
____C52. Installed a plumbing fixture.
____C53. Listed and described common causes of electrical accidents.
____C54. Listed steps to follow in assisting electrical shock victims.
____C55. Identified unsafe electrical conditions.
____C56. Listed electrical safety factors associated with the work area, tools and equipment, electrical installation, and special precautions.
____C57. Defined terms associated with the fundamentals of electricity.
____C58. Described the differences in a 110 volt and 220 volt electrical service.
____C59. Distinguish between single phase and three phase electric power.
____C60. Identified tools used in electrical wiring.
____C61. Identified supplies and materials used in residential wiring.
____C62. Identified the parts of a residential electrical service entrance.
____C63. Mounted an electrical box.
____C64. Installed NM cable in an electrical box.
____C65. Installed a duplex receptacle in an electrical box.
____C66. Installed 3-way switches in an electrical box.
____C67. Identified symbols used in residential electrical wiring diagrams.
____C68. Described the different types of branch circuits.

____C69. Listed rules for safety in masonry work.
____C70. Identified personal safety equipment used in masonry work.
____C71. Identified hand and power tools used in masonry work and described the use of each.
____ 72. Identified the types of common brick used in masonry.
____ 73. Identified the types of concrete blocks.
____C74. Stated the formula for mixing mortar using a pre-mix.
____C75. Listed the steps in mixing mortar using a power mixer or a mortar box.
____C76. Stated rules for caring for mixed mortar.
____C77. Mixed mortar.
____ 78. Supplied a mortar stand with mortar.
____C79. Identified the types of masonry joints.
____C80. Identified the kinds of brick courses.
____C81. Identified the kinds of brick bonds.
____C82. Laid a corner lead.
____C83. Completed a wall between corner leads.

BUILDING TRADES II

Student: _____

This record is provided as an alternative to the student performance records at the end of each unit. It can be duplicated for each student and serve as a cumulative record of competencies achieved in the course.

Place a check by each objective the student achieved; you may wish to note the date that the student achieved the objective.

C = Core competencies.

____ C1. Listed and explained general rules related to work safety in the shop.
____ C2. Listed and explained rules related to hand tool safety.
____ C3. Listed and explained rules related to power tool safety.
____ C4. Identified the basic parts of a house frame.
____ C5. Identified floor and sill framing and support members.
____ C6. Install floor framing.
____ C7. Identified the framing members used in walls and partitions.
____ C8. Framed a wall and partition.
____ C9. Laid out and installed ceiling joists.
____C10. Identified the different styles of roofs.
____C11. Identified the parts of a roof frame.
____C12. Identified the different types of roof trusses.
____C13. Identified the parts of a simple roof truss.
____C14. Framed and sheathed a roof.
____C15. Identified the parts of a box cornice.
____C16. Built a box cornice.
____ 17. Named classes of roofing.
____ 18. Identified basic types of asphalt shingles.
____C19. Applied underlayment and asphalt shingles.
____C20. Identified types of exterior sheathing.
____ 21. Identified categories and types of exterior coverings.
____C22. Installed sheathing and exterior covering.
____ 23. Identified the types of windows.
____ 24. Identified the parts of a window unit.
____ 25. Identified materials used for window panes.
____C26. Installed a window unit.
____ 27. Identified the types of entry doors used in residential construction.
____C28. Identified the parts of a door unit.
____C29. Installed an exterior door unit.
____C30. Identified types of insulation.
____ 31. Installed blanket insulation in walls.
____C32. Installed gypsum wallboard.
____ 33. Identified the different styles of interior paneling.
____ 34. Installed V-grooved paneling and trim.
____C35. Installed ceiling tile.
____ 36. Identified types of interior trim.
____C37. Installed an interior door unit.